

**Geometry Chapter 3 Practice Test****Multiple Choice***Identify the choice that best completes the statement or answers the question.*C

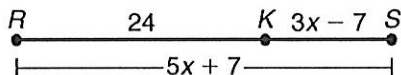
1. Which statement is NOT true?
- A Parallel lines do not intersect.
  - B A segment has exactly two endpoints.
  - C Two planes that do not intersect are always skew.
  - D A ray has exactly one endpoint.

H

2. The midpoint of  $\overline{XY}$  is  $Z$ . If  $XY = 3n$  and  $XZ = n + 15$ , what is  $YZ$ ?
- |      |      |
|------|------|
| F 18 | H 45 |
| G 36 | J 90 |

B

3. What is  $RS$ ?



- |      |      |
|------|------|
| A 5  | C 56 |
| B 32 | D 70 |

F

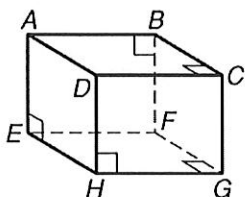
4. The midpoint of  $\overline{VW}$  is  $P(4, -3)$ . If the coordinates of  $W$  are  $(0, 15)$ , what are the coordinates of  $V$ ?
- |               |              |
|---------------|--------------|
| F $(8, -21)$  | H $(4, -33)$ |
| G $(-8, -21)$ | J $(2, 6)$   |

A

5. Which property justifies the statement "If  $2y = n$  and  $n = -3$ , then  $2y = -3$ "?
- A Transitive Property of Equality
  - B Reflexive Property of Equality
  - C Symmetric Property of Equality
  - D Multiplication Property of Equality

## Short Answer

1. Identify a pair of skew segments.



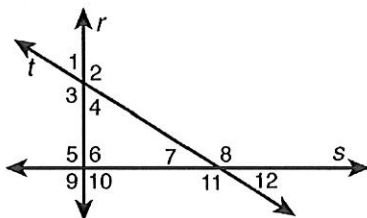
$\overline{AB}$  &  $\overline{EH}$  (Multiple Correct Answers)

2. Write
- True
- or False. Perpendicular lines cannot be skew lines.

3. How many total pairs of both alternate exterior and alternate interior angles are formed by a transversal that intersects two coplanar lines at two different points?

4

4. Given:
- $\angle 8$
- and
- $\angle 6$
- are corresponding angles. Identify the transversal.



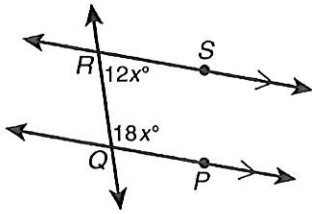
S

5. If parallel lines are intersected by a transversal that is not perpendicular to them, how many pairs of nonadjacent supplementary angles are formed?

8

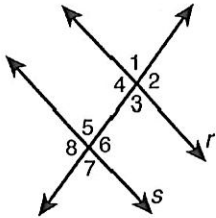
6. What one word completes the following sentence?
- Acute
- angles formed by a transversal of parallel lines are congruent and all the
- acute
- angles are supplementary to all the obtuse angles.

7. Find the measure of  $\angle QRS$  and state the postulate or theorem that justifies your answer.



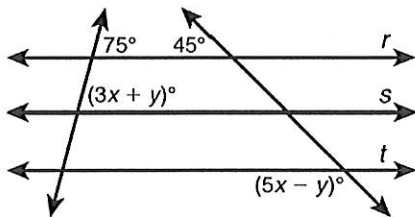
$72^\circ$  SSI

8. If  $\angle 1 \cong \angle 6$  and  $m\angle 1 \neq 90^\circ$ , is  $r \parallel s$ ?



No.

9. Which values for  $x$  and  $y$  make lines  $r$ ,  $s$ , and  $t$  parallel?



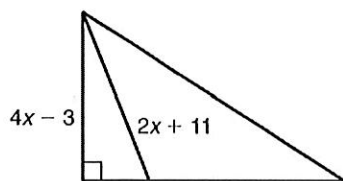
$$x = 26.25$$

$$y = -3.75$$

10. If two parallel lines and a transversal form angles that are all congruent, describe the relationship between the transversal and each of the parallel lines.

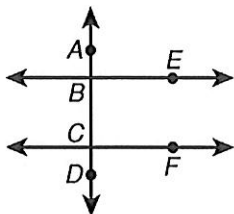
It's  $\perp$  to both lines

11. Write and solve an inequality for
- $x$
- .



$$4x - 3 < 2x + 11$$

$$x < 7$$



12.

**Given:**  $\overline{AD} \perp \overline{BE}$  and  $\angle BCF \cong \angle FCD$ .

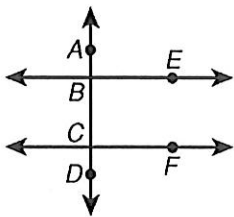
**Prove:**  $\overline{BE} \parallel \overline{CF}$

**Proof:**

Statements	Reasons
1. $\overline{AD} \perp \overline{BE}$	1. Given
2. $\angle BCF \cong \angle FCD$	2. Given
3. $\overline{CF} \perp \overline{AD}$	3. ____?
4. $\overline{BE} \parallel \overline{CF}$	4. ____?

State the justification for Step 3.

2 intersecting  $\hookrightarrow$  form a linear pair of  
 $\cong$   $\angle$ 's  $\rightarrow \hookrightarrow \perp$



13.

**Given:**  $\overline{AD} \perp \overline{BE}$  and  $\angle BCF \cong \angle FCD$ .

**Prove:**  $\overline{BE} \parallel \overline{CF}$

**Proof:**

Statements	Reasons
1. $\overline{AD} \perp \overline{BE}$	1. Given
2. $\angle BCF \cong \angle FCD$	2. Given
3. $\overline{CF} \perp \overline{AD}$	3. ____ ? ____
4. $\overline{BE} \parallel \overline{CF}$	4. ____ ? ____

State the justification for Step 4.

$\angle \leftrightarrow \perp$  to same  $\leftrightarrow \rightarrow \angle \leftrightarrow \parallel$

14. If the slope of a line is 0, which type of line is it and what is true about the  $y$ -coordinates of all points on the line?

horizontal, same.

15. Line  $r$  passes through  $(4, 4)$  and  $(6, 2)$ . Line  $s$  passes through  $(1, -1)$  and  $(4, y)$ . If line  $s$  is perpendicular to line  $r$ , what is  $y$ ?

$$y = 2$$

16. Line  $r$  passes through  $(1, 1)$  and  $(5, 7)$ . Line  $s$  passes through  $(4, -2)$  and  $(x, 3)$ . If line  $r$  is parallel to line  $s$ , what is  $x$ ?

$$x = \frac{22}{3} \quad 7\frac{1}{3}$$

17. Write *True* or *False*. All horizontal lines are perpendicular to all vertical lines, so the product of the slope of a horizontal line and the slope of a vertical line is  $-1$ .
18. Write *True* or *False*. Multiplying both sides of the equation for a line by the same nonzero number will produce an equation for a line that coincides with the original line.
19. Write the equation of the line that has  $y$ -intercept 4 and is parallel to  $y = -2$ .
20. Write an equation in slope-intercept form for the line that passes through  $(6, 6)$  and is perpendicular to  $-2x + 3y = -6$ .

$$y = 4$$

$$y = -\frac{3}{2}x + 15$$